Clean copy of the claims as pending after entry of the present Amendment

1. (Twice Amended) An expression vector which comprises an expression region, wherein the expression region comprises:

a promoter;

an intracellular retention signal sequence encoding region; and a chemokine encoding region;

wherein said intracellular retention signal sequence and said chemokine encoding region are expressed from said promoter as a single intrakine transcript; and wherein said expression vector is administered to a lymphocyte, a monocyte, a macrophage or a stem cell; and further wherein said lymphocyte, monocyte, macrophage or stem cell is transduced *ex vivo* with said expression vector.

- 2. (Amended) The expression vector of claim 1, further comprising a coding region encoding a secreted chemokine.
- 3. (Amended) The expression vector of claim 2, wherein said coding region encoding said secreted chemokine is expressed from an internal ribosome entry site.
 - 4. The expression vector of claim 1, further defined as a retroviral vector.
- 5. The expression vector of claim 1, wherein said intracellular retention signal sequence is an endoplasmic reticulum retention signal sequence.
- 6. The expression vector of claim 5, wherein said endoplasmic reticulum retention signal sequence is a KDEL sequence (SEQ ID NO: 7).
- 7. The expression vector of claim 6, wherein said KDEL sequence (SEQ ID NO: 7) has the amino acid sequence SEKDEL, SEQ ID NO:6.
- 8. (Twice Amended) The expression vector of claim 1, wherein said chemokine encoding region encodes a chemokine that binds to a C-C chemokine 5 receptor, a C-C chemokine 3 receptor, a C-C chemokine 1 receptor or a CXR4 receptor.
- 9. (Twice Amended) The expression vector of claim 1, wherein said chemokine encoding region encodes a chemokine that binds to a C-C chemokine 5 receptor.
- 10. (Twice Amended) The expression vector of claim 1, wherein said chemokine encoding region encodes a chemokine that binds to a C-C chemokine 3 receptor.
- 11. (Twice Amended) The expression vector of claim 1, wherein said chemokine encoding region encodes a chemokine that binds to a C-C chemokine 1 receptor.
- 12. (Twice Amended) The expression vector of claim 1, wherein said chemokine encoding region encodes a chemokine that binds to a CXR4 receptor.

- 13. (Amended) The expression vector of claim 2, wherein the secreted chemokine is RANTES (Regulated upon Activation, Normal T cell Expressed, and presumably Secreted), MIP- 1α (Macrophage Inflammatory Protein- 1α), or SDF (stromal cell derived factor-1).
- 14. (Amended) The expression vector of claim 2, wherein said secreted chemokine binds to a chemokine receptor.
- 15. (Amended) The expression vector of claim 14, wherein one or more amino acids are deleted from the N-terminus of the secreted chemokine.
- 16. (Amended) The expression vector of claim 1, wherein said intracellular retention signal sequence directs a protein expressed from said single intrakine transcript to the endoplasmic reticulum, Golgi apparatus, a lysosome, an intracellular vesicle or other cellular compartment.
- 17. (Twice Amended) An *ex vivo* method of inhibiting phenotypic expression of a chemokine receptor in a cell, wherein the method comprises blocking cell surface expression of said chemokine receptor by binding of said chemokine receptor with an intrakine.
- 18. (Twice Amended) The method of claim 17, further defined as comprising the steps of:

obtaining a vector comprising a nucleic acid segment encoding a promoter; an intracellular retention signal sequence and a chemokine receptor binding polypeptide coding region; and

transducing said vector into said cell; wherein said vector expresses said intracellular retention signal sequence and chemokine receptor binding polypeptide coding region under the transcriptional control of said promoter to produce a fusion polypeptide when transduced into said cell.

- 19. (Amended) The method of claim 18, wherein said polypeptide is a chemokine, the chemokine analog RANTES(9-68), an antibody or a peptide.
 - 20. The method of claim 19, wherein said polypeptide is a chemokine.
- 21. The method of claim 18, wherein said polypeptide is RANTES, MIP-lα, SDF, HIV gp 120 or the V3 region of HIV gp 120.
- 22. The method of claim 20, wherein said chemokine is RANTES, MIP- $l\alpha$ or SDF.
- 23. (Twice Amended) An ex vivo method of inhibiting HIV infection of a cell, said method comprising phenotypically knocking out an HIV co-receptor in said cell by binding of said HIV co-receptor with an intrakine, wherein said phenotypic knock-out of said HIV co-receptor in said cell inhibits infection of said cell.

- 24. (Amended) The method of claim 23, wherein said co-receptor is a C-C chemokine 5 receptor, a C-C chemokine 3 receptor, a C-C chemokine 1 receptor or a CXR4 receptor.
- 29. (Amended) The method of claim 24, wherein said cell is transduced with a CC-chemokine coding region fused to an endoplasmic reticulum (ER)-retention signal to intracellularly block the transport and surface expression of an endogenous CC receptor.
- 33. (Amended) The method of claim 29, wherein said CC receptor is a C-C chemokine 5 receptor (CCR5), a C-C chemokine 3 receptor (CCR3), or a C-C chemokine 1 receptor (CCR1).
- 34. (Amended) The method of claim 24, wherein said cell is transduced with a CXC-chemokine coding region fused to an endoplasmic reticulum (ER)-retention signal to intracellularly block the transport and surface expression of an endogenous CXR4 receptor.
- 38. (Twice Amended) A composition comprising the expression vector of claim 1 and a pharmaceutically acceptable solution.
- 39. (Twice Amended) A method of increasing white blood cell count in a subject with an HIV infection comprising administering to said subject a pharmaceutical composition comprising a lymphocyte, a monocyte, a macrophage or a stem cell transduced *ex vivo* with the vector of claim 1, thereby increasing white blood cell count in said subject with an HIV infection